#1501-00-0015

Objection of the Proposed Clear Creek Integrated Restoration Project Moose Creek Ranger District Nez Perce-Clearwater National Forest March 30, 2015

On January 23, 2015, Forest Supervisor Cheryl Probert of the Nez Perce-Clearwater National Forest announced the availability of the draft Record of Decision for the Clear Creek Integrated Restoration Project on the Moose Creek Ranger District. The legal notice of this decision was published on February 11, 2015. Pursuant to 36 CFR 218, Native Ecosystems Council and the Alliance for the Wild Rockies are filing an objection against this proposed action, Alternative C.

Lead Objector: Sara Johnson, Director, Native Ecosystems Council, PO Box 125, Willow Creek, MT 59760; phone 406-285-3611.

Objector Mike Garrity, Director, Alliance for the Wild Rockies, PO Box 505, Helena, MT 59624; phone 406-459-5936

Signed this 30th day of March, 2015

Sara Jane Johnson

Lead Objector Sara Johnson

Name of Project: Clear Creek Integrated Restoration Project

Responsible Official for the Project: Cheryl Probert, Forest Supervisor for the Nez Perce-Clearwater National forest.

Ranger District where the Project will be Implemented: Moose Creek Ranger District

Notice of Attached Materials: This objection includes Appendix A, which contains relevant literature cited in the Objection.

Objection Design: We have combined two of the requirements for an objection, the first being a description of those aspects addressed by the objection, including specific issues related to the proposed project, and if applicable, how the objector believes the environmental analysis or draft decision specifically violates law, regulation, or policy, and the second being a statement that demonstrate the connection between prior specific written comments on the particular proposed project or activity and the content of the objection. We have individually identified the issues which we have previously raised, then discussed why we believe the agency has failed to adequately address these issues, including satisfactory adherence to laws.

1. SNAG HABITAT

In our April 23, 2013 comments on the proposed project, NEC and AWR raised concerns about snag habitat. For example, at page 5, we expressed concerns that adequate snag numbers would not be maintained. At page 16, we questioned how the Forest Service can demonstrate that adequate snag levels will be retained for wildlife. Also at page 16, we noted that experts recommend snag densities of 2.1 to 11 per acre over 9 inches dbh, but that the minimum number needed is 4/acre. At page 24, we addressed the role that pine beetles play in ecosystems, which is key to snag creation. Also at 24, we again questioned if the project will retain adequate snags.

The 43,731 acre project area has had 16,498 acres of past logging, or 38% of the project area (Table 3-23 at page 3-98). A minimum estimate of older forest habitat that is providing snag habitat (assuming all 43,731 acres is forest, which is unlikely) is only 62%. The project Biological Assessment at 10 notes that there are few snags in old clearcut units, which are 10,896 acres in the project area. In response to comments, the agency noted at L-93 that 22% of old clearcuts have low snags. These were "walk through" surveys, and there were no actual data provided. In addition, there were no snag surveys in any of the past partial harvest units (5,521 acres). There will also be low snag densities in partial harvest units, or 5,521 additional acres, which is another 13% of the project area. These low densities will be due to loss of snags during logging, as well as limited snag recruitment after logging. Forest thinning is known to reduce snag habitat. Bull et al. 2005

reported a severe loss of snags after partial harvest. Actual measurements of snag loss from partial logging were measured by Holloway and Malcolm (2006), where densities of larger snags over 9 inches dbh decline by 58% in treatment units. Machmer (2002) reported a 50% loss of larger snags in treatment units. Bull et al. (1997 at 30) compared snags in stands with open versus dense canopies, and reported a large difference due to differences in forest density. And as noted in the EIS, forest thinning will reduce insects, one of the important creators of snags (EIS 3-174). In addition to forest thinning in partial harvest units, the agency intends to do prescribed burning, which may kill up to 50% of nonlegacy trees in units. Although these snags may be used by wildlife, they will be gone after 10-25 years. This loss will make future snag recruitment even more limited.

The Forest Service also noted that snags will last only 10 years, and potentially for up to 25 years (FEIS 3-172, 175). So the snags left after logging will not last until the time when new suitable snags will be developed, which is at least 100 years. The EIS also noted at 3-172 that forest stands that are clearcut will not develop larger snags for 100 years, and will not develop high levels of snags for 150 years, when the stand develops into old growth (FEIS 3-174, 193, 195).

The proposed project will clearcut another 4,156 forest acres, and thin 4,531 acres. These represent another 20% of the project area that will have no to few snags for the next 100 years, bringing the total cumulative impact of nonsnag habitat to 58% of the landscape. Yet there was no cumulative effects analysis of snag habitat in the EIS to demonstrate how this will impact cavity-associated wildlife. These bird species include 25% of the forest bird fauna (Bull et al. 1997). It is unlikely that snag habitat on only 42% of the landscape can maintain viable populations of all these bird species. Machmer (2002) reported that density and diversity of birds associated with cavity trees declined in concert (50%) with a 50% decline in snag habitat. It is clear the agency has not taken a "hard look" at past and planned impacts on a large number of bird species that require snags. This is a clear violation of the National Environmental Policy Act (NEPA).

The agency also did not discuss how the lack of snags in 38% of existing forests is affecting snag-associated wildlife. Since snag direction can only be currently achieved on 62% of the project area, how does this indicate that the Forest Plan snag standard is being met? If past logging units are not required to meet the Forest Plan standard, what percentage of the landscape

actually needs to meet the Forest Plan direction for snags to ensure viability of associated species?

The agency also did not address how the current snag direction for the Forest Plan will actually be achieved. The draft ROD at 17 notes that there will be 6 snags per acre (we assumer over 9 inches dbh) in harvest units. This would meet the identified 4 snags per acre minimum needed to sustain viable populations of cavity nesting birds (Bull et al. 1997). However, there is no information that demonstrates that units will actually maintain 6 snags per acre. Simply stating that 6 snags per acre will be maintained is not assurance this will occur either in partial or clearcut units. The agency provided no basis to support this claim. It is therefore impossible for the agency to demonstrate either that the logging will meet existing Forest Plan direction, or that cumulative impacts of logging in the project area will maintain viable populations of snag-associated species. Both of these actions are violations of the National Forest Management Act (NFMA).

2. ELK

In our April 23, 2013 comments on the proposed project, NEC and AWR asked the agency at page 1 to disclose the current open road density in the project area, the open road density during project activities, and finally, the open road density after projects have been completed. AT page 2, we asked the agency to disclose hiding cover levels for elk before, during and after project completion. Also at page 2, we asked the agency to disclose elk security before, during and after project completion. And again, at page 3, we asked the agency to not only disclose hiding cover before, during and after project completion, but to map this as well.

Elk is an MIS for the Nez Perce Forest Plan (EIS 3-198). The analysis did not demonstrate, however, that the Forest Plan standard for elk will be met with the project. The agency claims that the minimum 50% habitat effectiveness level will be maintained for Alternative C, but the baseline data was never provided to support this claim. It is possible that logging roads that are not open to the public are being considered as closed rather than open roads (draft ROD 17). Any road open to motorized use is considered a disturbance factor for elk (Christensen et al. 1993). A claim that the Forest Plan standard for habitat security will be met, when it in fact will not be met in all units, would not only be a violation of the Forest Plan

and NFMA, but it would be a NEPA violation for providing false analysis information to the public.

The agency also failed to identify the level of hiding cover in the analysis area, for either current levels or post-project levels. A minimum of 40% hiding cover is recommended on elk summer range (Black et al. 1976). The amount of hiding cover removed by the logging on almost 9,000 acres is therefore never disclosed, which is a NEPA violation. The agency also did not provide any actual monitoring data to demonstrate that the precommercial thinning of old clearcuts will maintain elk hiding cover. The agency also never disclosed the amount of thermal cover, or forest stands at least 40 feet tall and with a canopy cover of at least 70% (Black et al. 1976) that will remain on elk winter ranges. The claim that the project will improve elk winter range is thus never demonstrates, as thermal cover is an important factor for elk winter habitat (Id.). The impact of forest thinning on elk forage was also not defined, even though benefits are reported. It was noted at 3-202 that some openings will be wider than 800 feet, making forage unavailable to elk. The current best science actually notes that forage should not be any further than 600 feet from cover (Black et al. 1976).

There was no analysis in the EIS in regards to the impact of openings larger than 40 acres on elk. The creation of large openings will have a significant impact on elk foraging habitat, as larger clearcuts will eliminate foraging habitat. This impact needs to be addressed for elk, since elk is an MIS for the Forest. The impact of clearcuts on elk thermal cover on the winter range also needs to be addressed. The amount of areas lacking both thermal cover and forage for elk on winter ranges due to clearcuts, including those over 40 acres, needs to be addressed. Since the impact of large clearcuts on elk hiding cover, themal cover and forage were not addressed, this is a violation of both the NEPA and the NFMA.

The agency provided false analysis information to the public in regards to elk security. They state they evaluated the project area as per the Hillis et al. (1991) criteria, but they did not. The Hillis paradigm requires that security areas are nonlinear blocks of hiding cover (Id). Instead of following this definition, the Forest Service defined elk security as only distance from roads. So their analysis of elk security is invalid. This is likely why their analysis of security at EIS 3-203,304 doesn't make any sense. They claim there will be no effect to security because no new permanent roads will be built. However, temporary roads and opening currently closed roads will

reduce security. There will be clearcuts in security areas, which means they would no longer quality as security. The EIS indicates that security in the project area is very high, and will remain high after logging, even though 58% of the landscape will be logged. The actual level of security before, during and after the project is unknown, which demonstrates the agency failed to take a "hard look" at project impacts on elk vulnerability, in addition to misrepresenting the definition for Hillis security. Both of these are NEPA violations.

3. MOOSE

In our April 23, 2013 comments on the proposed project, NEC and AWR asked the agency at page 3 to map moose winter range in the project area. We also raised the concerns about required disclosures of historic habitat levels for old growth species, which would include the moose, and asked for information as to how much old growth would be required for viability, which would include the old growth-dependent moose. We also asked the agency to address whether the current Forest Plan direction is adequate for associated species, which would include the moose. We also asked how logged old growth could still quality as old growth. This would include the moose, where thermal cover would be removed with logging, and thus remove winter old growth habitat for the moose.

No map of moose winter range was ever provided. The agency also did not address our many concerns about management of old growth for moose. The issue of moose winter range availability is key to their viability in the project area, and thus adherence to the Forest Plan, which requires viability of MIS to be maintained, including within project areas, as these areas provide a indicator to forest-wide viability, and the impacts of management activities on MIS. There was no monitoring information provided in the EIS as to how the Forest has monitored management impacts on moose, including in the project area. This lack of monitoring is clearly having significant adverse impacts on this old growth MIS, as the proposed project will continue to eliminate a key habitat feature for moose in the project area, or thermal cover that provides winter habitat. The is abundant science that demonstrates that thermal cover, or forest stands at least 40 feet tall with a canopy cover of at least 70% (Black et al. 1976) is required for moose winter habitat in Montana (Tyers 2003). This research demonstrated that thermal cover, including forest stands with "double canopies" are key to moose winter

survival. Double canopies provide relief from deep snow, and ameliorate snow conditions; they reduce snow depth by intercepting snow and preventing crusting of snow due to shade and reduction of wind; snow falling on three branches – qali – reduces snow beneath trees, so snow depths are less in dense forest stands; browse may be energetically too expensive to reach if snow is too deep, as deep snow may restrict winter movements; consistent exposure to deep snow affects moose winter survival; snows can reach a "critical depth" beyond which moose survival is significantly affected; as a result, moose survival strategy is significantly affected by snow depth. Id. Tyers (2003) found an inverse relationship between snow depth and moose fecundity, with higher snow depths creating lower calf survival; there was substantial winter mortality in heavy snow years; mortality was caused by malnutrition, especially in calves; crusted snow in more open areas can make movement extremely difficult, and cause injuries to hooves and legs. The important effect of thermal cover allows moose to use their winter habitat because Id. Tyers (2003) concluded that the availability of dense older forests is a population-limiting factor for moose; there was a consistent association of moose to mature forests on their winter range. Id. Older forests are also important to moose because they provide the highest densities of subalpine fir trees under 5 meters in height; this fir is shade tolerant and occurs at greatest densities in older forests; subalpine fir is the principal winter food for moose in the Greater Yellowstone ecosystem. Id. It may take some forests up to 200 years after burning or clearcutting to develop suitable moose winter habitat. Id.

Logging in the project area has already eliminated up to 38% of mature forests, and thus had a huge impact on moose winter range. Yet the current proposal will increase the loss of moose winter habitat to at least 58% of mature forests in the landscape. Of MA 21, designated moose winter range, 23% has been logged or eliminated as winter habitat (3-205). An additional 483 acres, or 18% more, of this winter habitat would be removed from MA 21 with the current project, bringing the total removal of moose winter range in MA 21 to 40%. In addition to clearcutting, both the commercial thinning and improvement cuts will eliminate moose thermal cover, which requires a 70% canopy closure (Black et al. 1976). The commercial thinning will reduce canopies down to 40-60%, while the improvement cutting will reduce canopies down to 30-40% (EIS 3-174, 177, 179, 195). Following these harvests these stands will be prescribed burned, where up to an additional 50% of the trees may be killed (draft ROD 18). There will also be 283 acres of precommerical thinning, which will reduce stand densities as well as

remove subalpine fir, a key winter food for moose. Thus the total loss of moose winter habitat in MA 21 due to the project will be 766 acres.

For all moose winter range, both inside and outside MA 21, there will be 506 acres clearcut, 903 acres thinned, and 531 acres precommercially thinned, which will remove subalpine fir winter forage. This means that the project will remove almost 2,000 acres of moose winter range even though the moose population has severely declined. This was never identified as a significant adverse impact in the EIS, nor did the EIS estimate how much the moose population will decline as a result of the project. The agency failed to take a "hard look": at project impacts on moose in violation of the NEPA.

The agency is also violating the NFMA with the proposed project byu failing to ensure local viability of moose in the project area, and by a failure to monitor management impacts on moose winter habitat. This would be relatively easy to do, as Tyers (2003) noted. All that is required is to backtrack moose tracks on winter range to understand how they are using their winter habitat. The Forest Service has provided no information that they have monitored how moose are using this winter habitat, even though they are proposing a further reduction of almost 2,000 acres. The agency also failed to demonstrate how the project will impact the local moose population. They noted that allowed harvest of moose has been reduced by about 75% in recent years due to declining moose populations (EIS 3-205). It is implausible that an additional loss of 2,000 acres of moose winter range in the project area will not cause further losses, and threaten continued use of the project area by moose due to a lack of moose winter range.

Of particular concern is the agency's failure to evaluate how the impact of clearcutting, including clearcuts and seed tree harvests over 40 acres, will impact the MIS moose. This is a violation of both the NEPA and the NFMA. It is abundantly clear that open forest areas prevent moose travel through and thus access to remaining winter habitat. Clearcuts will also affect the thermal cover in adjacent forest stands, since edge effects permeate into forests, with increased snow depths and increased crusting of snow. Hargis et al. (1999) noted that microclimatic edge effects can extend into adjacent forest stands over 700 feet; thus a forest stands less than 300 feet in width is all edge habitat. Based on edge effects, the current best science recommends that thermal cover patches for elk, which would also apply to moose, need to be a circular patch at least 30 acres in size (Black et al. 1976). Small buffers

between clearcuts will thus not have suitable winter travel conditions for moose. The EIS suggests that moose will be able to travel to small patches of forest interspersed with clearcuts, but no actual science was provided to demonstrate that this is plausible. Moose travel corridors in the winter will have to be wider than 600 feet to provide snow conditions suitable for travel. Small patches of forest will not provide travel corridors. Thus it is unclear as to just how much effective moose winter range will actually be retained in the project area, and how this effective moose winter range was considered in regards to large clearcuts.

The agency's decision to create an undisclosed number of clearcuts over 40 acres is clearly a violation of both the NEPA (failure to evaluate impacts, failure to disclose the acreage and distribution of large clearcuts to the public), as well as an NMFA violation for a failure to evaluate the impact of large clearcuts on local viability of the MIS moose. The agency failed to demonstrate that the creation of many large clearcuts over 40 acres in size will allow continued use of MIS moose in this project area. The larger the clearcut/seed tree harvest, the greater the amount of moose winter habitat that is being removed in one localized area. The impact of clearcuts on moose winter range will be directly proportional, in part, to the size of that clearcut. There was no analysis in the EIS as to why or how many large clearcuts are to be created in moose winter range, and why this decision is considered suitable for moose.

The issue of loss of moose winter range, especially with large clearcuts, is issue is especially crucial to moose viability because they have not only decreased significantly in the project area, but are experiencing population declines across the western United States (Montana Standard 2013; Dickson 2012). Declines since the mid-1990s have worried biologists, with climate change being exacerbated with other impacts, such as logging thermal cover, being suspected causes. The logging of thermal cover will also impact moose summer habitat, as the climate heats up, because moose become heat stressed when temperatures exceed 59 degrees (Dickson 2012).

4.OLD GROWTH MANAGEMENT/MANAGEMENT INDICATOR SPECIES

In our April 23, 2013 comments on the proposed project, NEC and AWR raised a number of concerns about old growth habitats, and maintaining enough old growth to ensure local viability of old growth MIS. For example, at page 2 of our comments, we requested that the agency disclose historical levels of old growth, current levels as impacted by logging, and the level of old growth needed for viability of associated species. Also at page 2, we asked the agency to discuss the inadequacy of the Forest Plan old growth standards. We noted at page 16 that the Forest Plan requires the agency to maintain viability of old growth-associated species. Also of concern, at page 17 we asked how logged old growth can still be classified as old growth habitat, specifically how logged old growth stands will compare to Regional old growth definitions, including age and diameter of the various tree components, canopy closure, snag density by size class, amounts of down logs, and understory composition. Also at 17, we noted that the agency has not monitored population trends of these species in response to management activities as required by Forest Plans and the National Forest Management Act (NFMA). Also at 16, we noted that state of the art ecosystem management requires habitat connectivity is required to ensure wildlife viability. We further raised this issue of habitat connectivity more specifically for the threatened Canada lynx. At pages 33-34 of our comments, we noted that the Canada lynx is a classic old growth species, and it is also severely impacted by a loss of habitat connectivity on the landscape. The fragmentation of older forest habitat with logging, including both forest thinning and clearcutting, creates movement barriers for lynx, which reduces their ability to utilized remaining suitable winter habitat on the landscape. Lynx habitat fragmentation is not addressed by the Northern Rockies Lynx Management Direction (NRLMD), which is the direction being applied to the Clear Creek Project. We also noted that recruitment of lynx winter habitat, or older growth forests, is not required by the NRLMD, which is Forest Plan direction. We had noted at page 19 of our comments that it is essential for the agency to disclose the environmental baseline for watersheds. Assessment of cumulative effects, including habitat fragmentation and loss of older forest habitat, is not possible without looking at historic conditions and how they have changed via management. Without this information, the public has no idea as to why additional management is being proposed.

a. Pine Marten

The pine marten is an old growth MIS for the Nez Perce Forest Plan. It has been classified as an obligate old growth species due to its dependence upon old growth as winter habitat (Buskirk et al. 1989) There was no analysis in the EIS as to how much pine marten habitat has been lost due to previous logging on at least 38% of the forests in the project area. The current condition for this species was thus never defined in regards to the environmental baseline and cumulative effects of past logging. The proposal will remove another 20% of older forest habitat, bringing the total loss/degradation of pine marten habitat to 58% of the landscape. This cumulative habitat loss was never addressed in the EIS. The FEIS noted that clearcuts remove pine marten habitat for at least 50 years (3-191) so there would be ongoing cumulative effects from past logging, including over 10,000 acres of clearcuts. The partial harvests would have also impacted pine marten habitat by removing the canopy density, possibly below the minimum 30% required for pine marten, and that stands need to be at least 100 years old to provide suitable logs for pine marten. Id.; Response to Comments L-92. The 30% minimum canopy cover may actually be an underestimate, as Bull and Blumton 1999 reported that pine marten avoided logged stands with less than a 50% canopy. Partial harvesting also not only reduces logs for pine marten, but causes log to become flat on the ground, rather than the layered structure required by pine marten (Id.). Adequate quantities of dense, layered logs are essential for pine marten winter habitat (Sherburne et al. 1994, Buskirk et al. 1989). Logs break the snow surface and provide pine marten access to prey, as well as thermal cover next to logs in the winter (Sherburne et al. 1994). Although the agency stated that only certain habitats in the project area qualify as pine marten habitat, the landscape pattern of forests will be important to marten in regards to connectivity, so the general forest landscape has to be considered in evaluating pine marten habitat. Limiting management to just a few scattered forest stands will not ensure viability of this species, as it assumes that no other habitat is important. For example, stands that currently lack adequate amounts of logs may become suitable pine marten habitat in the future due to pine beetle infestations, or simply due to successional processes that result in progressive increases in subalpine fir over time. Older lodgepole pine stands have increasingly greater amounts of alpine fir (Tyers 2003). As alpine fir densities and logs increase, habitat also becomes more suitable for snowshoe hares (Squires et al. 2010). Removal of the forest understory in

forest thinning will reduce snowshoe hare populations, and thus reduce pine marten foraging habitat (Bull and Blumton 1999, Fager 2003).

The agency has no information on pine marten population trend in the project area, yet determined that the project will not impact population trend of pine marten (EIS 3-193). The EIS at 3-155 also falsely claims that all MIS will benefit from the Project. This is both a NEPA and an NFMA violation, since conclusions are arbitrary, and the agency is failing to monitor population trends of an MIS. The conclusion that additional logging will not affect pine marten populations in the project area is contradicted by current science. The project will reduce mature forest habitat by 20% by clearcutting and partial harvest. Partial harvest, including removal of the understory to reduce ladder fuels (EIS L-69) will remove key marten prey species, as red squirrels (Holloway and Malcolm 2007, Herbers and Klenner 2006, Bull and Blumton 1999) and snowshoe hares (Bull and Blumton 1999). Access to subnivean habitat under the snow in the winter due to logs is critical to red squirrel winter survival; logs also provide important cover for snowshoe hares. Id. These impacts are likely why pine marten use of logged area was reported to decline. Id.

The above noted impacts in the scientific literature clearly demonstrate that the agency is also violating the NEPA and the NFMA by claiming that logging will not change the characters of old growth habitat, including to the old growth MIS pine marten (draft ROD at 17, 38). Even the loss of snowshoe hares in areas that have been, and will be precommercially thinned was not identified as an impact to pine marten, even though hares are an important prey source for pine marten (Fager 2003, Bull and Blumton 1999), and because precommercial thinning is known to reduce hares (Squires et al. 2010). There was not any analysis provided to support this claim. It is clearly false for the pine marten, as indicated above, since canopy cover, log structure, and prey species will all change to reduce habitat quality for pine marten. The improvement harvest planned on 331 acres of old growth will reduce pine marten habitat. The actual logging of 331 acres of old growth habitat is difficult to even understand, as it was only reported in the EIS at one location that we could find, except in response to comments at L-43. This in itself is a NEPA violation, as a failure to disclose impacts to old growth. The EIS also failed to disclose that the current level of old growth in the project area is 14.5% (6376 acres, and will be reduced to 14% (minus 331 acres) with logging.

The agency is also violating the NEPA and the NFMA by failing to evaluate the impact of clearcutting, including clearcuts over 40 acres, on the old growth MIS pine marten. Although the draft ROD claims that the impact of large openings was evaluated, we could not find any actual analysis, including how many clearcuts will exceed 40 acres in size, or how much of the total clearcut acreage involves clearcuts and seed tree harvests over 40 acres. The impact of clearcuts, especially large clearcuts, will be severe on pine marten. It is well established that clearcuts create movement barriers/impediments for pine marten (Koehler et al. 1975, Heinmeyer 2002, Fager 2003). The barrier effect of clearcuts increases as their size increases (Heinmeyer 2002). Clearcutting also reduces the habitat suitability of pine marten in adjacent forest stands, since pine marten have been observed to forage 654 feet from clearcut edges. Id. Even in the summer, pine marten were rarely observed to forage in clearcuts. Id. Thus as the size of the clearcut increases, the local impact also increases. This is why Fager (2003) and Koehler et al. (1975) recommended that clearcut sizes be kept small. Fager (2003) reported that pine marten home ranges have to increase in size as clearcut areas increase. Due to these detrimental impacts of clearcuts, Hargis et al. (1999) recommends that clearcuts not comprise more than 25% of a landscape for pine marten, because in Utah they were almost completely absent in landscapes that exceeded this level of clearcutting. They noted the increased energetic costs associated with marten having to circumvent clearcuts, especially in the winter. When clearcuts become too high in landscape, it may energetically prohibit pine marten use of the landscape, due to the high interspersion of unsuitable habitat. Id. They also noted that a forest that is less than 300 feet in width is all edge habitat for pine marten. This means that connectivity of habitat between clearcuts may be lost if buffer strips are too small. In spite of these potentially severe impacts of large clearcuts on pine marten, there is no analysis in the EIS as to how large clearcuts will impact this MIS.

b. Fisher

Fisher is a sensitive species on the Nez Perce Forest that is associated with old growth habitat EIS 3-107). Logging, including both clearcutting and partical harvest, has already reduced fisher habitat in the project area by up to 38% of the landscape, depending upon elevation (16,498 acres). Past clearcut areas will not be suitable fisher habitat for at least 55 years (Jones 1991, Powell and Jones 1994). The additional logging will reduce potential fisher habitat by another 20%, depending upon elevation. This will include

331 acres of improvement harvest in old growth forests (Response to Comments L-43). This logging, in addition to past and planned precommercial thinning, will reduce prey species for fisher. The snowshoe hare is a known important prey species for fisher; hares are known to be most common in habitats with dense physical structure near the ground (Buskirk and Powell 1994), and hares are known to be reduced with forest thinning (Squires et alo. 2010, Bull and Blumton 1999). Forest thinning will also reduce red squirrels(Herbers and Klenner 2006, Holloway and Malcolm 2007, Bull and Blumton 1999). Thinning reduces cone resources for red squirrels and other small mammals eaten by fisher (Schwartz et al. 2013).

Fisher are documented to be sensitive to logging. For example, on the Nez Perce National Forest, they do not use nonforest habitat, or pole/sapling stands in the winter, and avoid them for at least 50 years (Jones 1991, Jones and Garton 1994). They occasionally use forest 60-100 years in age, but select for forests over 80-100 years in lodgepole pine, and 120-160 in mixed conifer forests (Jones and Garton 1991). They likes forests with complex structure, multiple canopy layers, and abundant large logs (Jones 1991). Fisher select for habitats with large trees, multiple canopies, abundant cone producing trees, abundant snags and logs (Schwartz et al. 2013). They avoid areas of uniform young forest. Id.

There was no analysis of the impact of large clearcut openings (and seed tree harvests) on fisher for the project. Fishers are known to avoid openings, especially in the winter (Schwartz et al. 2013, Jones 1991, Jones and Garton 1994, Raley et al. 2012).The barrier impact of clearcuts will increase with size. Fisher avoid open areas over 82 feet in Minnesota (Powell et al. 1994). This avoidance of open areas may restrict their movements; thus clearcuts will be detrimental to fisher due to habitat fragmentation; fisher like relatively unfragmented forests. Id. Large clearcuts, and numerous adjacent clearcuts of similar age should seriously limit resting and foraging habitat for fisher during the winter. Id. The precarious status of fisher in Washington and Oregon has been attributed to extensive clearcutting of late-successional forest and the fragmented nature of these forests. Id. The fragmented nature of forests can create patches of suitable habitat that are too separated for fisher use (Buskirk and Power 1994). Fisher have been reported to avoid forest stands less than 63 acres in size on the Nez Perce National Forest (Jones 1991).

The impact of large clearcutting on the fisher was also not evaluated in regards to the remaining patch size of mature forest habitat. The fisher is reported to avoid using small forest patches under 63 acres in size or stands with over 75% of their perimeter adjacent to clearcuts, while the recommended patch size for fisher older forest habitat is 128 acres, with at least 50% of the stands perimeter adjacent to other forest habitat (Jones and Garton 1994). The impact of large clearcuts on the size of remaining forest patches was never evaluated in the EIS.

The agency's claim that logging old growth with improvement harvest and/or commercial thinning will not affect old growth habitat (draft ROD 17, 38) was not supported with any analysis as to how logging old growth would impact the fisher. Intermediate harvest will reduce canopy cover below 40%, and commercial thins will reduce canopy cover to 40-60%; the minimum recommended for fisher is 40%, although canopy covers of 61-80% were stated to be preferred by fisher on the Nez Perce National Forest (Jones 1991, Jones and Garton 1994). Raley et al. 2012 recommended a minimum canopy cover for fisher as 60%. The canopy cover in logged units (improvement and commercial thinning) will likely decline further after harvesting due to prescribed burning, which may kill up to 50% of the nonlegacy trees. Logging will also reduce logs (Bull and Blumton 1999), and important prey species for the fisher, such as the red squirrel (Herbers and Klenner 2007, Holloway and Malcolm 2006) and the snowshoe hare (Bull and Blumton 1999). Thinning will also remove the forest understory, which is key to maintaining snowshoe hares (Buskirk and Powell 1994, Bull and Blumton 1999), and large logs (Bull et al. 2005). So it is impossible that logging old growth will maintain fisher habitat.

Currently the agency identifies only 23% fisher habitat in the project area, with the additional removal of another 18% habitat due to clearcutting (EIS 3-177). It is not clear that all fisher habitat was actually identified, since many forest stands will develop into fisher habitat over time, even if they are low quality now. For example, pine beetles will create fisher habitat, as was noted by Jones (1991) for the Nez Perce National Forest. The high abundance of downed logs created in lodgepole pine stands by the pine beetle provided high quality fisher winter habitat. Id.

If partial harvesting is included in impacts, which is very likely, another 16% of fisher habitat will potentially be removed (mature and older forest habitat). This would account to a 34% potential loss of fisher habitat, when

only 23% currently exists. It is not clear exactly how much fisher habitat current remains, or will remain after logging, but it appears that the project will clearly make a bad situation worse, possibly leading to the loss of fisher in this project area. The fisher is noted to be "critically imperiled" in Idaho (FEIS 3-175-177). They are also known to be present in the project area, although they remain at low levels in the Clearwater drainage. The agencies failure to provide an accurate disclosure of project impacts on fisher is a NEPA violation, while their claim that this project will not affect the population trend of the fisher in the project area (3-177) is both a NEPA and an NFMA violation, because it appears that the project will eliminate fisher from this landscape.

c. Northern Goshawk

The Northern Goshawk (hereafter "goshawk") is a MIS for old growth in the Nez Perce Forest Plan. There was no analysis of past or planned impacts on goshawk foraging habitat, because the agency claimed that foraging habitat is not considered to be limiting to the goshawks (EIS 3-193). This analysis failure is a NEPA violation because it is not supported by current science. Foraging habitat has been identified as the key to goshawk productivity (Reynolds et al. 2006, Salafsky et al. 2009, Salafsky et al. 2005). The project area has already experienced up to a 38% loss of goshawk foraging habitat due to past clearcutting and partial harvest on over 16,000 acres. The proposed additional logging on another 20% of the landscape will further reduce goshawk habitat, to only 42% of the landscape. The current best science recommends that at least 60% of a goshawk home range contain foraging habitat provided by mid-aged, mature and old growth forests. It is unlikely that this project will maintain existing goshawks, as is claimed by the agency (FEIS 3-195) where it claims the project will have no negative impacts on goshawks).

The proposed mitigation for goshawks will also not prevent adverse impacts, as is claimed by the agency. The draft ROD at 18 states that goshawk nests will be protected by a 40 acre buffer, while postfledging areas will have no disturbance activities from April 15 through August 15. However, the agency has failed to actually locate goshawk nesting areas in the project area (Response to Comments L-72). So to claim that mitigation will prevent adverse impacts is a clear NEPA violation, because the areas that will need this protection have not been identified. This is also an NFMA violation,

because goshawk nesting areas could be destroyed with the project, which would impact this local population.

The agency has clearly violated the NEPA by claim that the project will not impact goshawks. In addition to past logging, clearcutting of 4,145 acres will remove this amount of goshawk foraging habitat. Clearcuts of over 2-4 acres are not considered goshawk habitat (Reynolds et al. 1992). In addition, contrary to what was claimed by the agency, that commercial thinning will maintain goshawk foraging habitat, this will reduce the prey base for goshawk. Canopy and understory thinning will reduce the red squirrel (Herbers and Klenner 2006, Holloway and Malcolm) and the snowshoe hare (Squires et al. 2010, Bull and Blumton 1999). Both of these species have been identified as key prey species for goshawks in western Montana (Clough 2000).

The adverse impact of precommercial thinning, both past and planned, was not evaluated for goshawks in the project. Precommercial thinning is known to reduce snowshoe hares (Squires et. al 2010), and hares are known to be an important prey species for goshawks in Montana (Clough 2000).

The agency has clearly violated the NFMA by failing to monitor goshawks in the project area, or to monitor the impact of logging activities on goshawks. If this monitoring had actually been done, they would not claim that the proposed logging will not impact goshawks.

The agency is also violating the NEPA and the NFMA by claiming that logging old growth will not impact old growth species (draft ROD 17, 38). The old growth MIS goshawk will be adversely impacted by a loss of prey species due to overstory thinning effects on red squirrels (Herbers and Klenner 2006, Holloway and Malcolm 2007), and understory impacts from thinning and burning on both red squirrels and snowshoe hares (Bull and Blumton 1999, Squires et al. 2010).

There was no analysis in the FEIS in regards to the impact of clearcuts, including those over 40 acres, on MIS goshawk. Clearcuts over 2-4 acres are not considered goshawk foraging habitat (Reynolds et al. 1992). Thus the larger the clearcut, the greater amount of goshawk foraging habitat that will be removed in one location. The agency did not demonstrate that individual watersheds will retain enough goshawk foraging habitat (60%) to ensure persistence of this MIS.

There was no analysis in the FEIS in regards to the impact of clearcutting on landscape suitability for the goshawk as well. It has been demonstrated that as the amount of open habitat increases in a landscape, the suitability for the goshawk declines, and the potential for replacement by red-tailed hawks increases (La Sorte et al. 2004). The proposal to open up this landscape with large clearcuts will directly impact the goshawk as a result. This severe impact was never addressed in the FEIS, which is both a NEPA violation (failure to take a hard look at project impacts), and NFMA violation, or failure to maintain goshawk habitat even though it is an MIS.

There was no connection made between goshawks, an MIS for old growth, and the amount of old growth that will be managed in the project area. The current best science recommends at least 20% old growth for the goshawk (Reynolds et al. 1992). The agency did not provide any information as to why the targeted level of old growth for this project area only 11%. Why wouldn't it be targeted for 20%, as a proxy for goshawks?

It is clear that this project is a violation of the NFMA, because the agency reported that goshawks have been in overall decline in Idaho since 1966 (EIS 3-194). Yet they are proposed significant additional habitat reductions in the project area, without either monitoring goshawks in this area or on the forest, or locating goshawk nesting areas so that they will be protected from logging.

d. Pileated Woodpecker

The pileated woodpecker is an MIS old growth species for the Nez Perce National Forest. Up to 20 other species of wildlife use pileated woodpecker cavities (Bull et al. 2007). This species has been observed on quite a few occasions in the project area (EIS 3-196). The agency failed to evaluate the past and planned impacts on pileated woodpecker foraging habitat, since they claimed that nesting habitat is the most limiting factor for this MIS. There are no current management recommendations that we are aware of that recommend limiting pileated woodpecker habitat to nest stands. The entire landscape is to be managed for this species to ensure that adequate foraging habitat is provided (Bull and Holthausen 1993). It is not clear that breeding bird surveys can effectively monitor population trends of this low density species, especially as these surveys typically occur along roads. So the agency claims that this species is increasing in the western US are questionable. They have not provided any population or habitat monitoring

for the project area, other than to provide information indicating that old growth consists of 14.5% of this area. This level of old growth was never actually reported for the project area, however. The Forest has not reported on the nesting success for pileated woodpeckers in the project area or other habitats on the Forest. Nesting success, not density of birds, is the criteria for measuring habitat value for this species (Bull et al. 2007).

The past impacts of logging are clearly significant for this species, as 10,896 acres of clearcut and seed tree harvests removed woodpecker habitat for the next 100 years, until forest stands again provide larger snag habitat (FEIS 3-197). No clearcutting is recommended in pileated woodpecker habitat (Bull et al. 2007). Other acres logged by partial harvests (5,521 acres) would have reduced pileated woodpecker habitat by reducing canopy cover below the minimum recommended level of 60% (Bull and Holthausen 1993), snags and downed logs (Bull et al. 2005). The population reduction associated by past logging on 38% of the project area was never addressed, which is a NEPA violation. It is highly unlikely that these past logging impacts have not reduced pileated woodpecker habitat. Instead, the agency claimed that even additional logging on another 20% of mature forest habitat will not adversely impact this MIS (FEIS 3-197, 198).

Although the Nez Perce National Forest provided no information on the impact of logging activities on the pileated woodpecker, the is some high quality monitoring data that is available. Bull et al. (2007) monitored the impacts of logging in two project areas for pileated woodpeckers, one for 15 years and another for 30 years. They reported that the amount of unharvested stands and closed canopy stands in pileated woodpecker habitat were positively correlated to reproductive success; tree mortality by mountain pine beetles did not affect density and productivity of this species as long as stands were not harvested; after extensive clearcutting in one study area, the pileated woodpecker pairs declined from 5 to 1 pair, while in the other area where no harvesting occurred, the population remained the same or increased; the pairs most successful in fledging young had the lowest harvest areas; nest success increased as the amount of forest canopy cover increased to 60% or greater; there was an increase in avian predation as the canopy cover decreased.

The agency did not provide any analysis as to why logging old growth would maintain habitat values for the MIS pileated woodpecker. This is unlikely, as this species prefers canopy cover of 60% or greater (Bull and

Holthausen 1993), while improvement cutting of old growth will reduce canopy cover down to 20-30% (EIS 3-174). Research has also shown that partial logging reduces logs for pileated woodpeckers, and thus reduces the level of woodpecker foraging in logged stands (Bull et al. 2005).

The agency also provided no analysis as to how clearcuts, including those over 40 acres, will affect the MIS pileated woodpecker. The current best science even in 1993 recommended that there be no clearcutting in pileated woodpecker habitat (Bull and Holthausen 1993). The impacts of clearcutting on this species have been identified as a severe impact by long term research. Bull et al. (2007) monitored the impacts of clearcutting on this species in 2 different study areas in Oregon, and reported that the pileated woodpecker density was directly correlated to the amount of landscape that had been clearcut. Given this impact, the agency failed to demonstrate why extensive and large clearcuts will be planned in this MIS habitat. This failure to take a hard look at the impact of large clearcuts on this old growth MIS is both a NEPA and an NFMA violation. As the size of clearcuts increase, so will their negative impact increase on this species, although any clearcut will have a negative impact.

e. **Old Growth Management**

The agency failed to demonstrate why the current Forest Plan direction for wildlife is adequate to maintain viability of species as the goshawk, pine marten, pileated woodpecker, and fisher, or other forest species. The standard is only 10%, which is below that recommended by the current best science. However, 20% old growth is recommended for the MIS goshawk (Reynolds et al. 1992), 25% for the MIS pileated woodpecker (Bull and Holthausen 1993), and 20-25% for forest songbirds (Montana Partners in Flight 2000).

There was no analysis for the project as well, as to why the current patch size of old growth is adequate for viability of species associated with old growth. For example, the minimum patch size for older forest habitat for the fisher is recommended to be 128 acres (Jones and Garton 1994). The minimum patch size for the old growth species the brown creeper is recommended to be 250 acres (Wiggins 2005). This includes old growth that has not been logged, or fragmented. Id. The minimum patch size for the northern flying squirrel, an old growth species, is recommended as 540 acres (Duncan 2003). The current size of old growth patches in the project area is

very small, with 42% being below 50 acres in size. This was never evaluated as to quality of old growth, in addition to the actual amount of old growth. This lack of analysis is clearly a NEPA violation, as well as an NFMA violation. The agency is making decisions that will permanently and severely limit the potential of the project to ever provide large blocks of old growth in this landscape without even considering the impacts to wildlife. Not only will existing old growth be logged, but existing stands will be fragmented by adjacent logging and new roads. The existing mature forest stands will be logged instead of recruited into old growth. In addition, as we noted earlier, the barrier impacts of clearcuts can be severe to all old growth species, including the pine marten and fisher. These barrier impacts will also impact the Canada lynx, as well as the northern flying squirrel. Clearcuts and thinned forests are barriers to the Canada lynx in the winter, and continue to be barriers for up to 50 or more years (Squires et al. 2010). Clearcuts adjacent to old growth will also reduce interior forest habitat important for the pine marten (Hargis et al. 1994). Clearcuts adjacent to older forest habitat also will limit movements of the northern flying squirrel, as their dispersal distance through gliding is limited to a third of the height of adjacent trees (Bodin 2014). All these old growth species are known to be highly sensitive to fragmentation impacts, so management of older forest habitat requires careful management of fragmentation. These fragmentation impacts were never addressed in the EIS.

The agency is planning an illegal Forest Plan amendment to allow additional logging of old growth. The Amendment lacks any analysis of impacts to old growth species. It also cannot be limited to this small part of the Nez Perce National Forest. There is no biological reason why any Forest Plan amendments should not address the entire forest. In addition, this proposed amendment is a clear violation of the NEPA and the NFMA because it will exacerbate, not improve, existing problems with old growth management, which is the lack of biological effectiveness.

The agency failed to provide the rationale for providing only 4,654 acres of old growth in the project area. Why isn't the other 1,722 acres of old growth also allocated for wildlife?

The relationship between MA 20 and old growth allocated areas was never clarified in the EIS. Does MA 20 meet the Forest Plan standard of 50% old growth? Is this Forest Plan standard actually being met?

Suggested Remedies That Would Resolve the Objection:

Selection of the No Action Alternative would resolve this objection.

Supporting Reasons for the Reviewing Officer to Consider:

The Clear Creek Project Area of 43,731 acres, including 33% private lands which were not evaluated in the environmental analysis, has already been heavily impacted by logging. For example, old growth in the Project Area is only 14.5%, while we noted in our Objection that 20-25% old growth is recommended for wildlife viability. Old growth habitat patches are already very small in size, with 42% of them being less than 50 acres. Currently, at least 38% of the forests in the project area have been logged, and the proposed project will increase logged habitat up to 58%! Additional logging, including old growth, will result in yet further reductions of associated species. Instead of reducing mature and old growth forests, the Forest Service needs to adhere to the NFMA by restoring historic habitat qualities in this landscape, including old growth. The project will also result in additional loss of habitat connectivity for old growth-associated species, including the fisher, pine marten, and the Canada lynx. It is unlikely that these species will be able to use the project area as habitat once this project is implemented. The agency always claims that species viability is a landscape issue. However, the design of individual projects is a good indicator of how habitat is being managed across the Forest. Since this project will not maintain viability of old growth-associated wildlife species, we expect that the same design is being used across the Forest. Also, Forest viability is a "sum of the individual parts." Viability cannot be achieved if it is not maintained in individual project areas.

Of great concern is also the agency's failure to demonstrate how snag habitat will be maintained. Simply listing that patches of trees and snags in harvest units will be maintained does not demonstrate that 6 snags per acre will be maintained. The EIS also noted that snags will only stand for 10 years. How will future snags be maintained in all harvest units? Also, it was noted that there are very few snags in old harvest units, including almost 11,000 acres of clearcuts. If there are no snags in these old units, how can the Forest Plan direction be met?

We are also concerned about the complete lack of analysis in the EIS regarding the size of clearcut openings. There is no analysis. It is not even clear how many clearcuts over 40 acres will be created, the length of these clearcuts, or how they will impact habitat connectivity for wildlife, including MIS elk, moose, and pine marten, as well as sensitive species as the fisher and lynx. This is a huge flaw of this project, one that must be corrected. The agency needs to demonstrate that there are valid reasons to implementing large clearcuts, which are severe impacts on wildlife. There is no actual rationale provided as to why these large clearcuts are needed for wildlife.

We are also concerned about the agency's attempt to remove protections for old growth by exempting the project from Forest Plan direction. There was no information provided in the EIS as to why logged old growth will still maintain its values for wildlife. Just saying it will meet the minimum criteria as per Green et al. (1991) is not a valid analysis of this proposed exemption. In addition, this exemption, which violates the NEPA and NFMA due to a failure to develop alternatives and evaluate impacts, is illegal because there is no unique reason this amendment should only apply to the Clear Creek Project. Any amendments to old growth will have to apply to the entire Forest, which would require an EIS.

The agency's analysis of elk habitat effectiveness was invalid because the baseline information used was never provided. It is unclear what actual habitat effectiveness will be for elk during logging, since it was not clear that logging roads would be counted as open road since they would be closed to the public. The analysis of elk security was also invalid, as a false definition of security was applied to the project.

The analysis of project impacts on moose winter habitat was limited to meeting the Forest Plan direction. Since moose populations in this area have already significantly declined, it does not demonstrate that the Forest Plan direction is working. In addition, project impacts cannot be simply limited to whether Forest Plan standards are being met. This does not address the requirements of the NEPA.

The agency is clearly not implementing the requirements of the NFMA, in monitoring populations of MIS in regards to management impacts. There are almost no surveys of any MIS. This makes the implementation of mitigation measures for the goshawk meaningless. How can nest trees and postfledging

areas be protected if no one knows where these are? How can this mitigation measure thus reduce project impacts to goshawks?

The landscape impacts of logging and roading were not considered in this EIS because the 33% private lands were not included.

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